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ABSTRACT

A survey of student opinions on issues in medical education reveals several areas of consensus on needed changes. The following recommendations are suggested as a result of the survey: (1) Health care delivery should employ a multidisciplinary team of health professionals working to maintain health and prevent disease in communities. (2) Medical schools should emphasize the training of physicians as generalists, equipped to preserve the physical, emotional, and social health of patients and their families. (3) Decisionmaking in medical education and community health should be democratized so as to allow participation by representatives of those most intimately involved with these areas, i.e., medical students and consumers. (4) The environment of medical education should be altered to provide for improved teaching, increased flexibility in curricula, elimination of grades and de-emphasis of competition, and increased recognition of student needs for personal growth and interaction. (5) Medical school admissions criteria should deemphasize previous academic achievement beyond a minimal essential level and substituted criteria based upon personal characteristics, such as motivation and social consciousness. (6) Students should be allowed academic credit for participation in extramural educational programs. (Author)

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AMERICAN MEDICAL EDUCATION:

THE STUDENT VIEWPOINT

BY



Standing Committee on Medical Education
Student American Medical Association
William F. Jessee, Editor

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TABLE OF CONTENTS

MAJOR RECOMMENDATIONS-----	2
ADMINISTRATION-----	3
METHODS-----	4
INTRODUCTION-----	6
ISSUES IN MEDICAL EDUCATION	
I. HEALTH CARE DELIVERY-----	8
II. OBJECTIVES OF MEDICAL EDUCATION-----	13
III. ENVIRONMENT IN MEDICAL EDUCATION-----	18
IV. CURRICULUM-----	21
V. TEACHING METHODS-----	25
VI. EVALUATION-----	29
VII. STUDENT AND FACULTY ROLES IN DECISION MAKING-----	32
VIII. ADMISSIONS CRITERIA-----	35
IX. EXTRAMURAL ACTIVITIES-----	37
SUMMARY-----	43
REFERENCES-----	46

MAJOR RECOMMENDATIONS:

A survey of student opinions on issues in medical education reveals several areas of consensus on needed changes. The following recommendations are of key importance in the improvement of medical education.

1. Health care delivery should employ a multidisciplinary team of health professionals working to maintain health and prevent disease in communities. Members of these teams should be trained together in "health universities" in order to maximize their effectiveness.
2. Medical schools should emphasize the training of physicians as generalists, equipped to preserve the physical, emotional and social health of patients and their families.
3. Decision-making in medical education and community health should be democratized so as to allow participation by representatives of those most intimately involved with these areas, i.e. medical students and consumers. Medical student representatives, chosen by their peers, should sit as voting members on all policy-making bodies of the medical school. Consumer representatives should be members of all policy-making bodies for local, state and federal agencies involved with health policy and health care delivery.
4. The environment of medical education should be altered to provide for improved teaching, increased flexibility in curricula, elimination of grades and de-emphasis of competition, and increased recognition of student needs for personal growth and interaction. Increased instruction in theoretical and applied aspects of the social and behavioral sciences must become a part of all medical school curricula.
5. Medical school admissions criteria should de-emphasize previous academic achievement beyond a minimal essential level and substitute criteria based upon personal characteristics, such as motivation and social consciousness. In addition, characteristics of entering classes should be altered to increase the heterogeneity of racial, social and cultural backgrounds from which the classes are drawn.
6. Students should be allowed academic credit for participation in extramural educational programs. Educational opportunities similar to those available through such programs should be incorporated into medical school curricula.

Implementation of the above recommendations is dependent upon the joint efforts of students, the medical education institution, government, and private philanthropy. The development of viable programs in these six areas has an unparalleled potential for the improvement of health in America.

ADMINISTRATION:

This contract was administered by the Student American Medical Association through its Division of Medical Education. The following personnel were involved at the staff level in administration of the contract:

Carl Slater, M.D. - Director, Division of Medical Education
Carl Otten - Research Assistant
Richard Zalar - Student Assistant
William F. Jessee - Student Assistant
Sharon Johnston - Secretary
Ruth Johnson - Secretary

The student study group provided guidance and a philosophical framework for the work of the staff. Additionally, a major contribution to both the content and format of this final report was made by the student study group in its May, 1971 meeting in St. Louis. Membership of this group, selected from the Standing Committee on Medical Education, was as follows:

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Consultants to the project provided assistance in clarifying goals and objectives of the contract. We are grateful for the assistance of:

Ralph Murray, Ph.D.	Ray Simpson, Ph.D.	Hilliard Jason, M.D.
St. Louis, Missouri	Chicago, Illinois	East Lansing, Michigan

METHODS:

This report was compiled from numerous written sources of student opinion, both published and unpublished, and was designed to sample the broadest range of opinions possible. Although the terms of the contract under which the study was carried out precluded the use of questionnaires to sample student opinion, the committee feels that the variety of literature examined in this report makes it a document which is, indeed, representative of the mainstream of student thought. The conclusions and recommendations contained in the report represent the consensus of the Committee of Medical Education based upon the literature reviewed. In formulating recommendations, the Committee attempted to avoid injection of the personal philosophy of any of its members and to restrict recommendations to those things which could legitimately be construed as the majority opinion contained in the literature reviewed. We do not intend that this report be interpreted as the unanimous viewpoint of American medical students on needed changes in medical education; we do believe, however, that the recommendations accurately reflect the consensus of that appreciable fraction of American medical students who have expressed themselves through participation in conferences, workshops, and extramural education programs as well as in the published literature.

Several themes were particularly prominent in the literature reviewed. Many students, frequently of divergent origins and philosophies, were saying the same things regarding medical education. Thus, these six common themes became the basis of the major recommendations (page 2) of this report. The repetition of these themes in a number of contexts by a number of sources is apparent in reading the body of the report. The committee feels that these major recommendations represent the areas of major concern to American medical students and form a mandate for action to implement appropriate changes in medical education.

The composition of the committee itself is worthy of note. The members were selected by the chairman with the assistance of Messrs. Hamilton and Berger from among a large number of applicants for membership on the committee. In order to produce a document which was indeed representative of student opinion, the final membership of the committee was mixed in terms of race, sex, geographic origins, cultural background and political persuasion. The single common denominator was a pervasive concern with medical education and its role in filling the society's need for health care.

The committee met as a whole on four occasions over a one year period to assess progress in the work of the staff in gathering materials for review and to direct them in obtaining other sources of opinion for inclusion. This final report represents the work of the committee as a whole utilizing the resources accumulated by the staff during the year. The report was a task of the whole committee, with each member bearing responsibility for preparing the initial

draft of one or two sections of the document. Content of each section was outlined by the whole committee at its St. Louis meeting in May, 1971. The recommendations contained in each section were initially drafted by the committee member charged with writing that section and were later revised and approved by the whole committee. In order to provide consistency in format and writing style, the final document was prepared by the chairman who bears full responsibility for errors whether in fact or in grammar. Following review by each member of the committee for both content and format approval, this final report was prepared in its present form. It is the belief of the committee that, short of polling every medical student, this document is the single most representative source of both the diversity and intensity of student opinion on issues in medical education available to date.

INTRODUCTION:

Since 1965 there has been growing dissatisfaction among medical students with the educational process through which they were progressing. This has resulted in increasing student involvement in efforts to reform both medical education and health care delivery. Before 1965, involvement of medical students in basic questions of medical education was minimal. Although many of the more important educational problems of the present had begun to surface before that time, they remained largely a concern of faculty and administration. Small numbers of students, concerned with growing problems of health care and education, began to become involved in efforts to provide for themselves educational experiences they could not obtain through their medical schools. The initiation of Student Health Projects by the Student Health Organizations in 1964 marked the awakening of medical student activism.

Since that time, the number of concerned medical students and the volume of literature documenting their opinions have continued to grow. Since 1968, there has been an explosion of student-authored conferences, papers, and reports documenting student perceptions of major issues in medical education and health care. This report represents an attempt to draw together diverse and often controversial student viewpoints on several aspects of medical education and to summarize student recommendations for change in these areas.

In assembling this report, we have consulted large numbers of both published and unpublished works in an attempt to present the diversity of opinion available. Reports and proceedings of the two National Student Conferences on Medical Education and five Regional Conferences for Change in Medical Education have provided a sampling of the opinions of a combined total of more than 700 students. The Report of the SAMA Joint Commission on Medical Education was consulted to provide recommendations resulting from a two year study of medical education by a group of 15 students and 10 professionals. Reports of five Student Health Projects conducted in 1968 by the Student Health Organizations were utilized in obtaining the views of a number of students not involved with the Student American Medical Association. The single most representative source of student opinion on a national level was the collected resolutions of the SAMA House of Delegates for the years 1968-1971. Final reports of a number of SAMA-sponsored programs, including the Appalachia Project and the Medical Education and Community Orientation (MECO) Project, provided information regarding the role of extramural programs in medical education. The opinions of individual students, expressed in papers and speeches, provided further diversity of viewpoint from which to create this final report. Finally, a questionnaire distributed by the SAMA National Information Center in the early Spring, 1971 to some 400 students provided additional clarification of student attitudes on a number of points discussed in the body of this document.

The purpose of the present report is threefold:

- 1) To discuss and evaluate student views on problems and needs in medical education in each of nine designated areas of concern.
- 2) To synthesize these perceptions into feasible recommendations for the improvement of medical education.
- 3) To postulate mechanisms whereby these recommendations may be accomplished.

We hope that this document will be of continuing value in planning, developing and financing programs for the improvement of medical education to make it more relevant to the backgrounds and goals of the students and to the health care needs of society.

I. HEALTH CARE DELIVERY:

"The health care delivery system as it presently operates, and the functions of manpower, facilities, and new concepts in services and the roles of professionals."

The "Health Care Crisis" has become a national catch phrase, yet remains a complex multi-faceted, terribly misunderstood subject. It has become a problem which medical students have an increasing desire to study, understand, and influence. This is consistent with the student's reaction to his disenfranchisement and his desire to take responsibility for present and future endeavors within the medical school training program. Much of student effort devoted to effecting change in the medical education process has been predicated upon the assumption that changes in medical education will produce changes in health care delivery (36.)

The concept of health care delivery is a broad one, and students have attempted to dissect its elements in order to better understand the concept as a whole. For purposes of this discussion, the basic issues are first divided into several broad categories: a) Manpower and finances; b) patterns of practice; c) quality control mechanisms; d) attitudes and environment; and e) medical school influence on public policy. It is obvious, however, that considerable overlap among these categories occurs. In order to deal with this inherent overlap of concerns, further sub-divisions have been made. This initial section is an outline of student viewpoints regarding these important issues in health care delivery and is intended to serve as a frame of reference for the remainder of this report.

Issues in Health Care Delivery.

A. Manpower. Students consider the primary problem of health manpower to be one of numbers. The question frequently arises as to whether the solution to manpower problems is merely "more of the same" (57), or a revision of the types as well as the quantity of health manpower produced. Students have had ambivalent feelings about mechanisms for increasing health manpower. Proposals have included increasing medical school class size, shortening medical school training, increasing utilization of allied health professionals, increasing the number of foreign medical school graduates admitted to practice in the United States, expanding the use of medical students in service roles, and increasing the number of medical schools (10, 47, 54, 56). Students have not proposed that any one of these solutions will prove to be a panacea, but have rather indicated that some or all of them in combination can be of significant value in alleviating the current shortage of health care providers.

A second concern of students in the area of manpower has been the problem of distribution and accessibility of qualified health professionals. They have indicated that poor people and racial and socio-economic minorities have special needs in the area of health which may be met only by health professionals drawn from their own peer groups (36, 48, 54, 56). They have emphasized the need for decentralization of health care delivery and have emphasized the role of neighborhood health centers (49, 50, 59) in dealing with this problem.

Finally, problems of increasing physician specialization have been recognized as a contributing cause in the manpower crisis (59). Several solutions have been suggested by students. Increased utilization of health professional teams and groups providing preventive care has been one of the most popular themes of student thought in this area (40, 47, 56). This idea is tied in with that of training physicians and other health professionals as a team and with increased emphasis on ambulatory care and environmental control in the health professional curriculum (39, 40, 41, 42, 43, 47).

B. Finances. The problem of manpower is closely related to that of financing manpower training. Students have frequently called for increased loan and scholarship funds to increase the number of health professionals (53, 54). Further financing needs include increasing support for informational programs for the public and for recruitment of students from backgrounds presently under-represented in medical practice (36).

Funding for facilities is also seen as an important need in solving the health care delivery problem. Facilities for delivery of services, teaching and research are necessities (36).

The 1971 SAMA House of Delegates recognized the need for national health insurance and, in accordance with previous decisions by that body, called for abolition of fee-for-service as the primary means of financing health care delivery (55). Students have exhibited great concern with problems of financing health care delivery and have advocated solutions including prepaid group practice as well as government financing of either fee-for-service, capitation or prepaid group plans (54, 55).

C. Practice Patterns. Students have long recognized that the pattern of medical practice is an important factor in determining both the quality and quantity of medical care delivery. They have vociferously called for decreasing the emphasis of American medicine on solo practice and increasing the number of group practices, particularly multi-specialty groups (53, 54, 56). Students have also been concerned about increasing physician specialization and have called for both training programs and funding to provide increased numbers of primary physicians (3, 60).

Students have been concerned about accessibility of care. They consider it important that health care delivery be community controlled, with increased professional-consumer communication (59). Transportation is also seen as an important factor in accessibility of care (36, 59). Students have suggested that increased use of patient advocates, the team approach, and increased patient education in matters of health could provide valuable solutions to the problem of accessibility (36, 40, 47, 56, 59).

D. Quality Control. Quality control is a problem area with which students have not grappled to any great extent. However, a recent student-authored proposal calls for continuing education, periodic re-examination of physicians, review of record-keeping, peer review, and possible centralized monitoring by a federal agency as possible solutions to the problem of controlling the quality of health care (36).

E. Attitudes and Environment. Students have expressed grave concern with the attitudes of providers of health care and the resulting effect upon the health care delivery environment. They have cited lack of communication among students, health professionals and patients, and problems of ineffective interpersonal relations as a factor in increasing patient dissatisfaction with the health care delivery system (3, 36, 59, 60).

F. Medical School Influence on Public Policy. Student concern with medical school influence on public policy is perhaps best illustrated by the challenge issued by students to Yale President Kingman Brewster prior to the Alan Gregg Memorial Lecture before the Annual Meeting of the Association of American Medical Colleges in November, 1969. Students at that time indicated serious concern with the failure of the Yale University School of Medicine to become more deeply involved with the health care problems of its surrounding community. Problems of this nature have been a major concern of students and have led students to bring increasing pressure to bear upon medical school administrators. Students feel that it is a major responsibility of the medical school to become actively involved in the provision of health care services to their community and to engage in political action as necessary to assure government support for such programs (36).

Running through these principal concerns of students are some common themes:

- 1) Students believe that there are educational deficits which have an important impact on delivery of health care.
- 2) The lack of an interdisciplinary team approach to health care delivery is cited as being a principal problem.
- 3) The need to make care more easily accessible to the consumer is noted.
- 4) Consumer participation in control of health care delivery is seen as a neglected and vitally important issue.

Future health professionals have accepted the responsibility for health care delivery in the future. They envision the process of medical education as vital to this role. Thus, the recommendations below are formulated as potential means for solution of many of the problems involved in delivery of health care in America.

RECOMMENDATIONS:

In order to achieve needed changes in health care delivery, it is necessary to effect changes in the areas of patient education, roles of health professionals, accessibility of health care, role of consumers in management of health care delivery, and mechanisms of financing and delivering health care.

1. Patient Education. Patients must be educated in a fashion which includes exposure to health care maintenance as a mechanism for disease prevention. Increased public awareness of health care rights and of the opportunity to participate in management of health care delivery is essential. Increased education of communities regarding opportunities for careers in health care fields can serve as both a source of needed manpower and as a means of increasing community awareness of health.

2. Health Professional Roles. The proliferation of allied health professionals has created a great potential for increased efficiency in the delivery of health care. However, appropriate recognition of the potential of allied health professionals and definition of the exact nature of the roles they can play in delivery of health care are needed. Further, standardization of training and qualifications as well as means for licensure or accreditation are needed in order to protect the public. Attitude changes among practitioners are needed in order to allow allied health professionals to be accepted as equals in the team approach to health care delivery.

We anticipate that many new health professions will soon emerge in order to fill present areas of inadequacy in manpower, practice patterns, quality control, and financial feasibility. These professionals, too, will face problems of standardization of roles and training procedures and of both legal and professional responsibility.

3. Accessibility of Care. There is a need for documentation of needs in this area leading us to recommend further sociological and geographical studies to confirm the nature of problems involving the access of consumers to adequate health care. Analysis of manpower potential in the medical, allied health, and new health professional fields is also needed. Study of delivery of patient care in the hospital, office, and community health center settings is required to identify the proper role of each of these means of health care delivery and their adaptability to changing needs. Finally, examination of new means of health care delivery such as neighborhood clinics, volunteer clinics, etc. is needed in order to determine the viability of these new mechanisms for delivery of health care.

4. Consumer Participation. Consumers must be represented on the controlling boards of hospitals, community clinics and medical schools, as well as represented at the federal, state and city levels in determination of health care policies. Consumers are also needed in service roles in health care delivery including patient advocacy as well as training for professional roles in health. Finally, consumer involvement can play an important role in self-education for health maintenance.

5. Central Influence on Health Care Policy. Some form of nationalized health insurance is a necessity. The approach to this problem should probably be one of taking the best of each of the existing proposals and incorporating them into a comprehensive nationalized health insurance program. This should be coupled with efforts to implement the National Health Service Corps, provided in recent legislation, in order to develop innovations in health care delivery. Finally, the physician draft should be ended until such time as it addresses itself to domestic health care delivery problems.

II. OBJECTIVES OF MEDICAL EDUCATION:

"The objectives of medical education in the light of changing needs and demands on the health professional."

Students have demonstrated increasing concern that the objectives of medical education are often not clearly stated by either medical educational institutions or national organizations concerned with medical education. In order to define a program of medical education more relevant to the needs of the individual student and society, it is necessary to clearly define the objectives of medical education and to make all programs subservient to those objectives.

Students have divided the objectives of medical education into two broad categories: Long range, ultimate objectives ("the nature of the physician") and more immediate objectives of medical education ("mastery of the material").

A. Long Range Objectives. These center around students' belief that the major goal of medical education should be, "to further the idea of adequate health care for all" (41). This concept defines the objectives of the medical school in terms of the obligation of the institution to society. This is an idea repeated frequently in student thought; for instance, a recent questionnaire distributed by the SAMA National Information Center to activist students revealed strong interest in increasing involvement in social problems pertinent to medicine and health care. Similarly, students felt that medical schools have an obligation to engage in direct social action for the improvement of health to a markedly greater degree than they are presently doing (60). Students are concerned that medical education should produce physicians who are "sensitized to the political and social concerns of medicine" (6). Medical education must "develop a sense of political and social awareness on the part of the student toward society and his role within it" (45).

Competence, defined as possession of the basic medical knowledge necessary for the practice of medicine, is an objective on which students do not dwell. Rather, they consider that they will gain it and instead direct their efforts towards its application (56).

Finally, students believe that the objectives of medical education must include the training of physicians as parts of a multi-faceted health care team which includes other professionals in related areas of health (40, 47, 56). At the same time, they believe that the physician should be trained to be flexible in his professional role (56). The concept of the "sophisticated generalist" is one which has been repeated under many names (35) by various students. This idea is best defined as a physician who practices general, family medicine but who is extremely well-trained in both the technical and social aspects of medicine, and who--via continuing self-education--remains at the frontier of his profession. Students believe that the adoption of such an objective for medical education will result in a physician who is able to fill more than one role on the health care team.

B. Immediate Objectives. The immediate goals of medical education should include encouraging personal growth (45) as well as the professional and intellectual growth of the student. Students believe that a second immediate goal of medical education should be the training of generalists or primary physicians (60). However, they complain that medical schools presently are training them as hospital-based super-specialists (60). Cade (3) indicated that medical schools are producing rising numbers of researchers while society continues to demand increasing numbers of generalists. It appears that a dichotomy exists between the call of students for increasing emphasis on the concept of the health care team and their call for the physician to be trained for an increasingly broader individual role. These concepts need not be necessarily mutually exclusive. Medical education can be designed so as to train physicians who can serve as both "sophisticated generalists" and as members of the broader health care delivery team as their circumstances demand.

A need for training physicians so as to provide for flexibility in career goals has been cited by students in numerous instances (40, 41, 47, 56). The idea that medical education should generate a spectrum of physician products with individualized student programs to correspond with individual career objectives has been suggested (35, 56). As demonstrated in Figure 1, this would achieve a bell-shaped distribution of physician careers that could be closely aligned to the needs of society. Students perceive that medical education presently is geared to produce physician products along a distribution curve skewed far to the left (Figure 2), with heavy emphasis on researchers and subspecialists.

Students also see medical education as an opportunity for instilling attitudes of cooperation and partnership into both physicians and other health professionals. They have called for the elimination of the "captain of the ship" concept in the training of physicians and recognition that there may be times when the physician is not best suited to serve as leader of the team (56). In addition, students have called for medical education to center upon the concept of the patient as an individual functioning in his environment (45), to integrate medical knowledge and to "filter and distill" necessary medical information (47, 56), to train them so as to equip them for continuing self-education (56), and to help them develop powers of observation.

In summary, students feel that the goals and objectives of medical education should be constantly evolving in order to meet the needs of society rather than the needs of the educational institution. Two major streams of thought within the broad context of the objective of furthering health for all have emerged repeatedly in student discussions of objectives of medical education:

1. Physicians should be trained in a fashion which will allow them to function as cogs on the wheel of the health care team. This implies that all members of the team are specialists and that each is coequal with the others.

2. Physicians should be trained as generalists who may or may not be members of a team. The physician in this context is seen as the central figure in the life of the patient, caring for him as a functioning individual with medical, social, emotional and environmental problems.

While somewhat different in emphasis, these two concepts are not mutually exclusive and probably represent two possible approaches to solution of health care delivery problems. We feel that both concepts are laudable objectives for medical education as a whole, although a given institution need not espouse both concepts. We see the concept of a "spectrum" of physician career endpoints as a desirable goal for the nation; unfortunately, the present distribution of physician careers is skewed far to the left with over-representation of researchers and subspecialists and corresponding under-representation of generalists and primary physicians. While individual institutions may choose to continue to emphasize one aspect of this spectrum over the others in their educational programs, it is essential that the national output of physicians be altered in such a way as to normalize this curve.

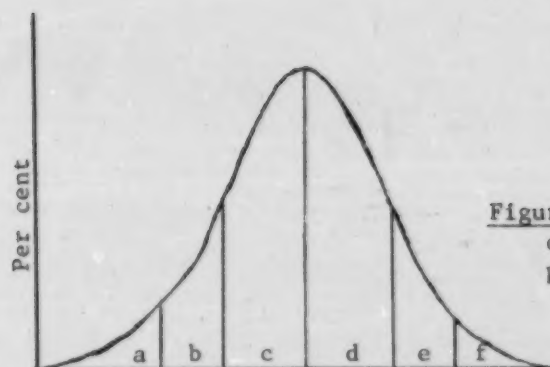


Figure 1. "Ideal" distribution of physician careers as postulated by students.

KEY:

a. Research	d. General practice
b. Sub-specialties	e. Preventive medicine
c. Primary care (incl. internists, pediatricians, OB-GYN)	f. Public health

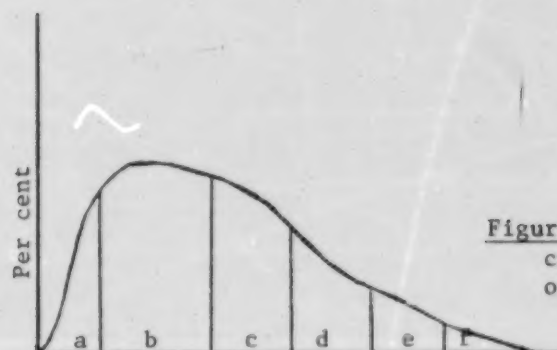


Figure 2. Student view of current physician career output from medical schools.

RECOMMENDATIONS:

1. Medical schools should assess health care needs, establish educational objectives in the light of these needs, and make public their educational philosophies and objectives.
2. Curricula, admission criteria, teaching methods, evaluation mechanisms and administrative procedures must all be subservient to and based upon the stated objectives of the educational institution.
3. Federal funding efforts should be modified a) to meet current needs by providing greater support for training on the health care team concept or as sophisticated generalists, and b) to provide for redistribution of funds so as to achieve normalization of the distribution of physician career endpoints.

III. ENVIRONMENT IN MEDICAL EDUCATION:

"The medical school environment as it affects the personal and intellectual development of the student and as it affects patients and the community in which the medical school is located."

Medical students perceive their educational environment as an element which detracts from the essential process of learning and personal development and from the ability to empathize with human feelings. Arthur Douville, in a 1968 editorial in The New Physician, characterized medical schools as seeming to be "expressly organized to stifle independent thought, limit student contact with the outside world, and channel the interest of their increasingly restless inmates through the application of a kind of intellectual straightjacket of poorly balanced expectations, utilizing values which employ the practice of isolation and rigid social control (11)."

Students have repeatedly referred to medical education as a "dehumanizing process". They claim that the environment surrounding medical education decreases their sensitivity and humanistic feelings for the patient (47). They feel that the student is forced to become narrow with a mental focus on materia medica to the exclusion of matters relevant to the non-medical world (3, 13, 29, 47, 60). As a result of this dissatisfaction with their medical education, students turn to extramural projects in order to feel personally fulfilled (39, 60).

The lack of communication and interpersonal relations in the medical school environment has been cited repeatedly by students. Particularly, they are concerned with the inaccessibility and frequent lack of interest of faculty in the personal and/or academic problems of the student (17, 30, 60, 61, 62, 63). Additionally, they are concerned with the lack of interaction between medical students and other health science students (3, 22, 27), and among medical students themselves, primarily as a result of the competitive atmosphere in medical school (60). Finally, they are also concerned by the lack of faculty-faculty interaction created by the institution of departmental autonomy (47).

Students look upon medical education as an elaborate game which fosters "roundsmanship" and the development of the skill of gamesmanship (13, 16, 21). It has been stated by one student that "in medical school, playing to win requires the loss of ideals (3)."

Students have also found that the medical education experience bears little resemblance to medical practice and frequently centers around patients with exotic or unusual conditions. They have called for broadening the base of medical education (58) and for increasing the degree to which the medical educational process resembles medical practice (3, 10).

Finally, students have characterized the medical education environment as a racist one. The notable absence of students from racial and socio-economic minority groups has been repeatedly seized upon by medical students as an example of the middle-class racist attitude inherent in medical education (9, 39, 40, 41, 42, 43, 47, 54, 56). Additionally, students have noted the absence of other minority groups such as women (33, 44) and the uniformity of personality and background of students accepted for entrance into medical

In summary, student opinion characterizes the atmosphere of medical education as repressive, competitive and authoritarian with little room for expression of individuality or creativity in meeting the personal needs and role objectives of the student. As a result, students often develop cynical attitudes toward the medical education process in order to cope with the environment in which they find themselves. The degree of student dissatisfaction with the training process is frequently related to the degree of disparity between student and institutional goals.

RECOMMENDATIONS:

1. The scope of education within medical school should be broadened so as to allow for fulfillment of the personal needs of medical students as individuals.
2. The team concept in training of health workers should be employed in order to broaden the circle of personal interaction of medical students and to provide for more effective functioning of the health care team in practice.
3. Students and faculty should consider each other to be colleagues with the mutual goal of improving health care in this country. Elimination of artificial evaluation mechanisms which develop undue competitive attitudes is necessary in order to fully develop this relationship.
4. The counter-productive nature of ritualized rounds procedures and other useless traditions of medical education must be recognized. Elimination of such extraneous and self-defeating traditions will improve the medical education environment.
5. Medical education must be extended into community hospitals and rural medical centers in order to broaden the clinical base of medical education.
6. Medical schools must provide for the personal needs of a more heterogeneous group of medical students coming from different social, economic, and cultural backgrounds.

IV. CURRICULUM:

"The curriculum as a means of attaining the educational objectives of the school."

The medical school curriculum is seen as the means by which the educational objectives outlined earlier can be attained. Students have indicated that if these goals are to be achieved, the curriculum must be designed with the objectives clearly in mind. Medical curricula often appear to be designed as ends unto themselves rather than to achieve particular educational objectives.

For purposes of discussion, the area of curricula may be divided into two large categories. The curricular content is defined as the subject matter which is taught, while the curricular process is defined as the means by which that subject matter is taught. Additionally, students have frequently expressed their concern regarding the need for flexibility in both the content and process of medical school curricula.

A. Content of the Curriculum. As a means for improving the humanistic characteristics of the medical school environment and preparing students to deal more adequately with social and economic problems in medicine, numerous student conferences as well as individual students have called for increased emphasis on the teaching of social and behavioral sciences in medical school (35, 47, 54, 55). Particularly, students have been concerned that their medical education was ill-preparing them to deal with problems involving human sexuality (4) and problems of drug and alcohol abuse (26, 55). In addition to training in the medical aspects of the social and behavioral sciences, there have been student demands for increased availability of experience in applied behavioral science techniques including participation in sensitivity training groups as part of the formal curriculum (56).

Training in techniques of problem solving has also been identified as a need frequently not met in contemporary medical education. Students have pointed to the value of the problem solving approach as a technique in learning as well as in the solution of problems in medical practice. There have been frequent calls for training in both individual and group problem solving approaches (39, 41 47).

In addition, students have called for the orientation of the medical school curriculum to become more closely focused on the patient as a functioning individual, molded by his physical and social environment (24), and less on individual diseases (40). One student conference emphasized the sharp dichotomy between "medical cure" and "medical care". While medical education presently emphasizes the cure of a given pathologic process in the individual patient, medical students feel that their education should instead emphasize preventive care for individuals, family groups, and communities (40).

Finally, students have at various times indicated that the content of medical curricula should be broadened in scope. They have called for elimination of inessential material and the inclusion of instruction on medical-legal issues, problems of community health care delivery, methods for the delivery of health care, and methods for financing health care (40, 47, 56, 59).

B. The Process of the Curriculum. The means by which the above factual material is communicated to the students has been of great concern in the last few years. While there is necessarily some overlap between curricular process and teaching methods, discussed later, several important aspects can be discussed in the present context. Students have frequently despaired of the dichotomy in methods, objectives and interrelations between the basic science and clinical science years of medical school (47, 56). They have pointed to this difference in approach as having detrimental effects on both the efficiency of learning and the attitude of students. Greater correlation between basic science and clinical science teaching and the institution of a problem-solving approach are offered as potential solutions to this problem (39, 47).

Medical schools, perhaps more than any other educational institution have been indicted by their students as being encumbered by tradition. Students see tradition to be a major obstacle to change in the medical educational process (47). They have, therefore, called for reformulation of teaching objectives unencumbered by "traditional" concepts.

Students have called for medical schools to define a "core" of essential knowledge in all major disciplines. "Core" is considered to be "those aspects of medical knowledge which are deemed essential to every student, regardless of background or ultimate career direction (23)." Concurrently, they have requested increased elective opportunities in order to allow for experimentation in career orientation and/or earlier specialization of interest (42, 43, 47, 56). The extramural educational programs* in which many students participate should be accredited by the medical schools as a means of making educational opportunities of this nature a part of the formal training of the physician (23, 51). Occasional students have called for the institution of "track" programs, in which the student makes an early decision regarding his general area of career interest and proceeds down an educational path designed specifically for that general career area. However, these have usually been seen as only an adjunct to well-advised elective programs (47, 56).

*An extramural educational program is defined as "any program not a part of the required medical school curriculum which contributes to the professional growth and education of the medical student; may or may not involve remuneration (51)."

Students have called for all medical schools to institute departments or divisions concerned exclusively with the process of medical education. Functions of such departments are seen as primarily those of coordination, innovation, and evaluation of the medical curriculum. Additionally, such departments are expected to become involved in providing training in teaching techniques for the teaching faculty (41, 43, 47).

C. Flexibility of the Medical Curriculum. As an adjunct to changes in the curriculum content and process, students have repeatedly asked that the medical curriculum be made more flexible in order to allow for individual student differences. They have called for flexibility in the subject matter as noted above to allow for individual career goals (54). Additionally, they have repeatedly asked that time restrictions for completion of training be removed from the curriculum and that performance criteria be substituted. They see this as a mechanism for allowing individuals to move at their own pace and producing a variation of time spans from matriculation to graduation (47, 54, 56).

RECOMMENDATIONS:

1. Medical schools must diversify the content of the curriculum so as to provide for more emphasis on the social and behavioral sciences. Instruction must be included in both the theoretical and applied aspects of the social sciences as they impinge upon the practice of medicine.
2. A core of essential basic knowledge should be defined and continually updated in all major medical disciplines. This core should compose the basic curriculum for all medical students.
3. Time available for electives and elective course offerings should be maximized. Approved extramural educational programs should become a part of the formal medical school curriculum.
4. The time needed for students to progress from matriculation to graduation should be individualized. Students should be allowed to progress through their medical education at their own pace with promotion based upon performance evaluation rather than completion of fixed time intervals.

V. TEACHING METHODS:

"Teaching methods as they relate to the attainment of educational objectives of the institution and as they relate to the personal growth of the student."

Teaching is recognized as a major component of the educational environment and the most important single mechanism by which students attain competence. Teaching should facilitate the accomplishment of the curricular objectives of the institution, guide students' study, and provide models for student role assumption. Students turn increasingly to involvement in extramural educational programs because they provide needed curricular and role model contrast to traditional medical education (51, 58). Students feel that only in this fashion can they experience an educational program which has its base of reference in the community and which provides models for the continued community orientation of the student (47, 56). They believe that experiences of this nature provide them with a basis for continuing patient education and the practice of preventive medicine (47).

In student discussions of teaching methods, the effects of teaching techniques on student motivation and on the attainment of the educational objectives of both the student and the institution are emphasized. Unfortunately, students frequently feel that learning often occurs despite rather than because of the teaching method utilized (40).

Students state that teaching methods must be subsidiary to stated learning methods. Faculty ideas regarding methods of teaching frequently do not sufficiently consider student experiences with effective learning methods (47). Students have also called for the use of teaching methods which do not make the determination of student competence dependent upon specific commitments of student time. Finally, they have indicated an understanding of the principle that learning increases with responsibility and external stresses only to a certain point, beyond which additional stress causes a rapid decrease in the amount of learning which takes place (47, 56).

The predominant teaching form in American medical education remains the didactic lecture (25). Students consider this to be an inefficient and unstimulating use of their time and an indicator of the unconcern of faculty with student learning (32, 40, 41, 47, 54, 56). The Socratic teaching method, involving either small groups of teachers and learners or one-to-one learning relationships, is generally well received and felt to be highly productive in terms of student learning (56). The intensive utilization of this system has been proposed for several new medical schools (including the University of Missouri at Kansas City and the University of Alaska) largely as a result of student input into planning of these institutions. Exhibits of audio-visual teaching aids and computer assisted instruction at the 2nd National Student Conference on Medical Education demonstrated strong student interest in such aids and general

scarcity of exposure to them (56). Increased utilization of such teaching techniques would lend itself well to student calls for individualization of the learning process.

Students also view evaluation as a teaching tool. They have called for early, usable feedback from faculty regarding performance on evaluatory instruments as an important means for self-teaching (47, 56). Most students report that the results of student examinations frequently modify teaching methods in their institutions (60). Peer discussions, whether a part of the formal curriculum or as an extracurricular learning activity are regarded as useful and efficient (40, 47, 56).

Laboratory experiences, particularly in the basic science years, have received a notable amount of attention from students. Basic science teaching laboratories should reinforce the didactic material presented in lectures and seminars (47, 56). Live models have been advocated as providing a useful and realistic mode for teaching medical students, particularly in anatomy (47). The importance of experiential education in which the student becomes both physically and psychologically involved in the teaching of behavioral sciences, clinical medicine and physician sensitivity has been emphasized (41, 56). Similarly, students feel that experience in clinical laboratories in the basic science years would be stimulating and provide a high learning-to-effort ratio (56). Student opinion regarding programmed texts is generally positive (56) despite the decreased faculty contact involved in this teaching technique.

Reformation of rounds procedures in order to make these experiences more valuable as learning experiences has been suggested. Students have frequently indicated that they feel they can serve as effective teachers to their younger colleagues in the setting of clinical rounds (16, 56).

Finally, students have called for increased utilization of sensitivity and encounter techniques in medical school teaching. Participation of health care teams in these exercises is considered to be particularly important (36, 41, 47, 56).

The quality of teaching is another area which has been of considerable concern to students during the past three to four years. The most commonly identified need has been for teachers in medical education to have training in techniques of education (56, 57). The recent questionnaire distributed by the SAMA National Information Center revealed that most medical students feel their medical school professors are poorer teachers than were their undergraduate instructors (60). Too frequently, students are subjected to a barrage of factual material without an awareness of the teacher's goals in presenting this material to them. They have stated that clarification of the goals of instructors can serve as a positive educational stimulus (39).

There is strong student feeling that rewards in academic medicine, such as advancement and salary, should be heavily based upon teaching ability (37, 53, 54). They complain that the heavy dependence of medical schools upon research for financial support often results in a reduction in faculty hours available for teaching. Further, they lay much of the blame for lack of teaching excellence in medical schools today upon the low remuneration received by faculty members who are more heavily oriented toward teaching than toward research. They have called for the establishment of committees in each school, composed of students, faculty, and administrators, to evaluate the teaching effectiveness of faculty members and recommend appropriate promotion and salary increments. They have also called for federal government subsidy programs for teaching and for rewarding teaching excellence (47, 56).

In summary, students have decried the lack of good teachers in medical schools. They have called for greater diversification of available teaching methods and accommodation of diverse learning modes. They have asked that teaching methods provide a stimulating educational environment and that teachers recognize the critical effects of stress on student learning.

RECOMMENDATIONS:

1. Teachers in medical schools should be required to master basic educational theory and psychology.
2. Excellence in teaching should be judged by joint faculty-student evaluation and rewarded by rank promotion and salary increase.
3. Teachers in medical school should be confronted with and made aware of the importance of the academic and personal role model they represent to their students.

VI. EVALUATION:

"Evaluation of students, faculty, and the curriculum as a measure of success in attaining educational objectives and as it affects the motivation of students and teachers and as it effects change to correct the deficiencies revealed by the evaluation."

The issue of evaluation has been an important one to medical students because of its relationship to the quality of the medical school environment, to changes in teaching and curriculum content and to the quality of health care. Students have asked for evaluation mechanisms which will assure them that they are making progress towards proficiency; yet students wish to study in an educational environment which is pleasant and humane. The medical faculty has the responsibility of assuring the public that the medical graduate is competent to engage in the practice of medicine. At the same time, they also have responsibility for maintaining the students' enthusiasm and motivation towards the practice of the art and science of medicine. Evaluation of faculty is also important in assuring quality teaching in medical schools. Finally, evaluation of the curriculum is needed in order to ascertain the success of any given curricular model in meeting the educational objectives of the institution and the needs of society.

Student evaluation has received considerable attention from medical students and has been the subject of numerous suggestions. A recent student-conducted survey revealed that 34% of American medical schools presently employ a letter or number grading system, 18% a mixed system, 46% utilize pass-fail evaluation, and 2% some other means of evaluation (1). Few of the schools with letter grades or mixed systems are satisfied and many anticipate changing to the pass-fail system in the near future. Student opinion through the past several years has been uniformly in favor of pass-fail as the preferred means for evaluation of medical students (2, 32, 47, 56). Students generally believe that pass-fail evaluation and faculty recommendations provide accurate estimations of their performance, although they complain that neither of these two mechanisms particularly stimulates them to learn more (60).

Use of National Board Examinations for evaluation of student performance is commonplace. However, students express a strong belief that National Board Examinations are not only inaccurate for evaluating educational progress but also useless as a stimulus to learning (60). Oral examinations, while reportedly less commonly employed than written examinations, are felt to be similarly inaccurate as measures of educational progress but are generally considered to be far more stimulating to student learning (60).

What is even more important than the particular method of evaluation utilized is that evaluatory instruments be used to provide feedback to students regarding their progress. It is a well-established principle of educational psychology that any instructional method which necessitates immediate and frequent feedback to the student on a performance or learning task has

a better probability of success than one which does not. Students have called upon faculty to employ this principle in the design of evaluation instruments (47).

In a similar vein, students have requested that "all student records be open records allowing students to know how they have been evaluated. Before letters [of recommendation] are sent, students should be allowed to review these letters and make comments about how they are being evaluated (56)." Such an open record system provides the student with more feedback information regarding his performance, decreases paternalism, and assists in making the educational environment a more open and honest one.

Student evaluation of faculty remains rare. This is unfortunate because faculty evaluation could lead to improvement in teaching methods (47). The great majority of students favor evaluation of faculty and feel that, as in student evaluation, it should be an open process discussed freely among the parties involved (56). Agreement with this viewpoint was expressed by the 1969 SAMA House of Delegates in a resolution advocating the formation of committees, including students, to evaluate teaching at each educational institution (53).

Finally, students have recognized that a need exists for continuing institutional self-evaluation in order to allow institutional goals and objectives to adapt to the changing needs of students and communities. While little has been written regarding possible mechanisms for such institutional evaluation, students have generally agreed that such evaluation is a necessity. One source has suggested that institutional evaluation can best be accomplished by a team of trained students, faculty, and administrators working together within the walls of the institution as a force for continuing evolution of goals and objectives and evaluation of the institution's success in attaining them (36).

RECOMMENDATIONS:

1. Students should be evaluated on a pass-fail basis and all student records should be open to the student.
2. Students should periodically evaluate faculty with particular emphasis on teaching ability. Such evaluations should be open and subject to discussion with the faculty member concerned.
3. Student-faculty-administration committees, trained in methods of problem identification, problem solving, and evaluation, should be charged with continuing examination of the educational program of the medical school. This function could appropriately be coordinated through an Office or Department of Research in Medical Education.

VII. STUDENT AND FACULTY ROLES IN DECISION MAKING:

"The role of students and faculty in the function of the school; their involvement in the administrative decision-making bodies."

Student demands for representation on decision-making bodies in medical schools are largely a result of their dissatisfaction with their educational experiences. "The more the student is directly involved in his education, the more his interest and the less his resentment (20)." In addition, students have expressed a need to learn to function in roles which they must fill in later years; participation on policy-making bodies is one such role. Finally, student dissatisfaction with the contribution of medical schools to health care has been a further stimulus to their demands for representation on decision-making bodies.

A recent student-authored proposal for change in medical education documented student dissatisfaction with the present health care delivery scheme and the role of medical schools in training students as providers of health care. "This proposal offers one approach to improving health care in the United States. We seek to facilitate the process of educational renewal in those institutions responsible for the education of health care personnel. As medical students and recent graduates, we feel that any leverage we may muster toward improving the health care delivery system must be applied to that vehicle we know best--the medical educational institute; it is here that we should urge re-evaluation of the entire educational process whereby physicians and other health professionals embark upon the delivery of health care. To be effective, any effort toward educational renewal must take place at the grass roots level of the individual institution, for it is here that the various elements molding the young health professionals converge. It is here that the student encounters profoundly influential "role models": Faculty of the basic and clinical sciences, faculty who exemplify thought processes, attitudes and ethical codes that will be assimilated by the students. Medical institutions can remain responsive to the needs of society only if the means exist to change goals and subject matter to meet ever-changing demands. This is best accomplished by involving in the change process all those who play a part in the institution's operation: Students, faculty, administrators, and other health professionals and community members when appropriate (36)."

Students feel that they are being deprived of an opportunity to contribute to the determination of the nature of their own educational experiences (14, 28, 46). They "have concluded that the [student health] projects have demonstrated that the health professional students themselves are far more capable of determining the nature of their own educational process than the present organization and structure of their schools permit (7)." They complain of a feeling of impotence in the determination of educational objectives. "As students, we have no voice in determining our educational process. Except for a minimal amount of time devoted to a narrow range of electives, we are not allowed to plan our courses; nor are we allowed to judge professors or examine the qualifications for admission or promotion of our peers. In each of these functions, the student has at much at stake as do faculty personnel

to promote the excellence of the university. Both faculty and students are subject to similar areas of judgement (7)."

That students are dissatisfied with their disenfranchisement cannot be doubted. The 1970 SAMA House of Delegates resolved that an educational system which does not allow powerful influence from those most directly affected by the educational process is not tolerable (54). It is clear that the great majority of students feel that the simplest remedy to this problem is full membership of students on all decision-making bodies within the medical school.

RECOMMENDATIONS:

1. Students, selected by their peers, should be full voting members of all decision-making bodies within each medical school. In addition, consideration should be given to the incorporation of student members on health policy-making bodies at the state and national levels.

VIII. ADMISSIONS CRITERIA:

"Admissions criteria and procedures and the role of the students in the selection procedure."

Student thought regarding medical school admissions has centered around problems of increasing the diversity of medical students and basing admission more upon personal characteristics than upon previous achievement. As a partial solution to the health manpower problem, students have called for increasing enrollment in medical schools. Additionally, there have been repeated student demands for diversification of the social, economic, and cultural backgrounds of medical student classes. In 1968, the Committee on Black Admissions in Philadelphia demanded that 33% of the entering class of each Philadelphia medical school be composed of students from racial minorities (9). The 1970 SAMA House of Delegates approved resolutions calling for each medical school to admit 20% of its entering class from racial and socio-economic minority groups by 1975-76; to institute matching programs for minority students; to increase financial assistance to minority students; and to increase the proportion of the faculty drawn from racial and socio-economic minority groups (54). This was in keeping with prior action by the 1968 and 1969 House of Delegates calling in a more general fashion for increased representation of racial minority groups in medicine (52, 53). Additionally, numerous sources have emphasized the importance of increasing the numbers of female medical students as a step toward diversification of the medical profession (44, 53, 57).

The present emphasis of medical school admission processes on college grade point average and scores on the Medical College Admissions Test has been cited as a contributing factor in the homogeneity of medical school student bodies and the competitive nature of the medical school environment (12, 30, 41, 56, 57). Students have called for an end to reliance on these criteria and institution of new admissions criteria based upon affective characteristics such as student flexibility, empathy and career motivation. A recent regional student conference on medical education called for admissions criteria to include career goals of the applicant; degree of social awareness; skills in interpersonal relations, problem solving and communication; previous medical experience; knowledge; and gross physical and mental health (41). Other students have called for social class, race, and social service experience to be given consideration in the admission of students (53). One student has called for an analysis of the potential contribution of the applicant to solving health care delivery problems as a possible criterion for admission (5).

It is important to note that students have realized the difficulty of objective evaluation of many of the human qualities described above. They emphasized, however, that such tools and methods must be developed if the medical school admissions process is ever to become the powerful lever for achieving institutional goals it purports to be. A recent

student-faculty conference called for all selection of medical students to be based upon human qualities such as those enumerated above once the students have demonstrated a minimal level of academic achievement (19). Students have pointed to a number of possible mechanisms for assessing the qualities which they have suggested are important in medical students. Among these are multiple interviews by both faculty and student members of the admissions committee. Also, student essays on applications for admission, previous medical experiences of the applicants, and student descriptions of their extra-curricular interests and activities are seen as measures of potential value in assessing the human characteristics of the applicants (41). Inclusion of students on admissions committees can also provide a unique viewpoint on prospective students which would not otherwise be available to the members of the admissions committee (41, 53).

Additionally, students have called for modifications in the admissions process. The 1969 SAMA House of Delegates called for local action to increase the interest of women in medicine as a means for diversification (53). A medical student matching program was endorsed by the 1970 SAMA House of Delegates as an equitable means of providing for protection of both applicants and institutions in the admissions process (54). Advanced placement programs, early admission programs, and uniform application forms have been suggested as other means for streamlining the admissions process and for shortening the length of medical education (57).

Finally, medical students have called for closing the present gap which exists between premedical and medical education. They feel that the period between graduation from high school and attainment of the M.D. should be considered an educational continuum and have called for changes in both the premedical and medical curriculum in order to effect amalgamation. Increasing communication with premedical students is a second potential means for making the transition from undergraduate to medical education a more tolerable one (54). While medical students generally agree that the courses which they completed as part of their premedical education were helpful to them in medical school (60), they have frequently called for increased flexibility in premedical requirements (60). Some of the most common comments of medical students have been related to the need to minimize premedical requirements and to liberalize the nature of courses taken so as to provide increasing emphasis on the humanities and social and behavioral sciences. A number of students have commented on the wastefulness and repetition involved in the transition from premedical to medical studies (60).

In summary, student recommendations in the area of admissions and admissions criteria have been emphatic in their call for the substitution of personal criteria for achievement criteria for admission. Students feel that such changes in admissions procedures will result in increased diversity of medical students and thus of the medical profession with a resulting beneficial effect upon the health care delivery system. Finally, medical students are distressed at the lack of continuity between premedical and medical education and have called for closer relationships between medical schools and undergraduate institutions and between medical and premedical studies.

RECOMMENDATIONS:

1. Admissions criteria should provide for increased consideration of personal characteristics of the applicant and diminished emphasis upon previous academic achievement. Techniques for accurate evaluation of such human qualities of value to the physician should be developed.
2. The diversity of medical school entering classes, in terms of racial, cultural, experiential, and interest backgrounds, should be increased. Application of admissions criteria based upon personal characteristics should be of value in accomplishing this objective.
3. Premedical and medical education should be considered to be a continuum. Medical schools and undergraduate educational institutions should take upon themselves the responsibility for developing closer relationships with each other in order to make the transition from pre-medical to medical education less traumatic.

IX. EXTRAMURAL ACTIVITIES:

"Extramural activities initiated by students in correction of deficiencies of the formal educational process and in experimenting with innovative models of health care delivery, education, and personal sensitization to the health needs of the community."

Medical student dissatisfaction with medical education has given rise to numerous student efforts to fill gaps in their curriculum by experimentation with extramural programs. These programs have grown from the desire of students to grapple with problems of our times in ways which contemporary medical education has not utilized intramurally (50). From the time of the first major student health project (the San Joaquin Valley Project in 1963) students have sought to satisfy needs to be of help to others which are not met in medical school. They have developed extramural programs which they feel "contribute immeasurably to students' education" because they increase awareness of inequities in the American health care delivery system, contribute ideas about constructive means for changing health care delivery, and provide an understanding of medical care outside the hospital setting. These are all areas which have been in large part ignored by formal medical education programs (50).

The majority of student projects have been summer projects. They have operated frequently since 1966. The original impetus for summer student health projects came from members of the Student Health Organization (SHO). In 1968, student interest in the SHO's and their national projects was at its highest (6, 7, 8, 18, 34, 38). However, because of changes in attitude about the efficacy and validity of student involvement in such projects, SHO sponsored no summer programs in 1969. That same year, however, witnessed the first SAMA Summer Health Project, the Appalachian Student Health Project (48). The goals and insights of the Appalachian Project grew from the earlier SHO programs. The emphasis was on education rather than service and on institutional change rather than the radical interpretation of American institutions which had become the orientation of many individuals still involved with the SHO's (23).

Extramural projects have proliferated in number and kind such that it is now estimated that more than 80% of medical students will participate in an extramural program of some type before graduation (17, 50). The SAMA Indian Health Project, the new Migrant Workers Project, the Medical Education and Community Orientation (MECO) Project, and the Appalachian Student Health Project have filled educational gaps left by medical school training programs. In addition, numerous local student activities, while frequently conducted with the advice and consent of the medical schools, nonetheless remain extramural activities not formally approved by the schools. Each of the perceived needs filled by these programs is a mandate for change in medical education. Some of the criticisms gathered by students and employed in designing extramural programs over the past few years are summarized below.

In general, students consider the medical school environment narrow and restrictive. The emphasis during the first two years is narrowly basic science oriented and in the second two years narrowly oriented on disease processes. Psychological, sociological, economic and preventive aspects of medical care receive little emphasis (3,24,45). Instruction in the laboratory setting rather than the community setting has traditionally been the preference of the medical faculty. Students have interpreted these aspects of the medical school environment as being reductionist and dehumanizing. The interplay of integral human forces has been neglected in favor of the frozen and controllable world of the laboratory or the hospital (3). Experiences outside of the medical school have given students opportunities to expand beyond this myopic focus. These are major reasons for student involvement in extramural programs (25).

Students further cite feelings of depersonalization of both themselves and patients in the hospital setting as a reason for their activism (61, 45). They are forced to focus on the technical rather than the human aspects of a situation in contradiction to the desires which bring most students to study medicine.

The initiation of the California Medical Student Forum at the University of Southern California in 1964 was a result of students' desires to obtain instruction regarding major issues in health care. The lack of inclusion of instruction on such issues in the medical school curriculum is cited as another common cause for student participation in extramural programs (60). Scientists spend hours discussing sensitive tests for blood lead levels without mentioning the most obvious methods for preventing children from eating the 25-year-old paint on tenement walls. Most of the SHO projects, as well as many local projects, cite such inconsistencies as their raison d'etre (6,7,38,50).

In a similar vein, other students have seen extramural programs as an opportunity to be educated in the realities of health care for the poor (6). The "culture of poverty" has created people whose needs are distinct from those of society as a whole and must be understood and filled in particular ways. Rural, Appalachian, Indian, and migrant worker populations are all specific examples of such "cultures of poverty". Students also feel that participation in student health projects is a stimulus for community action for social change (6,38).

In few instances in the medical school curriculum are students given experience in different techniques for delivery of health care, nor are there opportunities for experimentation in health care delivery. The Appalachian Project, the MECO Project, and the 1968 SHO projects grew in part out of this area of deficiency in the medical school curriculum (6,7,15,18,48,58). Medical students have pointed out that faculties of medical schools are, to a large degree, socially and economically inbred.

In addition, there are more and more faculty members who have never practiced medicine outside the academic setting (3,10). Students find it increasingly difficult to identify with faculty members, particularly when medical schools provide the role model of the hospital-based super-specialist while students continue to desire to pattern themselves after family practitioners (60). Thus, problems of role identification are another major reason for students to participate in programs outside the walls of their institutions.

Medical students enter medical school impatient to practice medicine. The long incubation period necessary before they can engage in the delivery of medical care becomes a source of constant frustration (50). Students feel that their institutions should be more actively involved in delivery of health care to their surrounding communities and are anxious to use all the skills they have to offer in whatever way they can (60). Additionally, students desire to work with a team of other health professionals in the delivery of health care. Deprived of this opportunity in medical school, they have turned to extramural programs. The SAMA Appalachian Project, Child Development Project of 1970, and Conference on Local Interdisciplinary Community Health Projects point to this desire and to its fulfillment in extramural programs (48,50).

Finally, the medical school environment has not succeeded in reinforcing the career motivation of many of its students despite rigorous admissions criteria. Many students turn to extramural programs purely for the personal satisfaction which they provide and for a sense of personal as well as intellectual growth (60).

Experiences obtained by students while participating in extramural projects have generated a number of conclusions. Many of these were summarized in the report of the recent Conference on Local Interdisciplinary Community Health Projects (50). Participants in the conference included nursing students, dental students and pharmacy students as well as students of medicine. The conference was designed primarily to allow exchange of information regarding local student community health projects. Students summarized their feelings on community health projects by calling for them to provide services to the community which have been defined and are desired by that community. The services should be continuous and the community must be involved in the project from its inception. Self-evaluation is a necessary part of every project. In all cases, conference participants felt that the educational benefits of the project to the students should be weighed against the service provided to the community and, if these goals are in conflict, the educational benefits must be subordinated (50). In a similar vein, the Greater New York Student Health Project of 1968 concluded that the major objective of a student health project should not be to sensitize or educate students, but rather to change the structure of health care delivery systems (18).

Out of student project experiences, there has come a minority student view that student organized health projects are necessarily undesirable.

This view was expressed by a number of people at the Local Projects Conference (50) and has been the view of a number of those who were involved in the SHO Student Health Projects. One basis for this feeling is the belief that the goals of student projects should be incorporated into the goals of the medical school and that the continuance of extramural projects allows the medical school curriculum to remain unresponsive to student needs. Others base their opinion on the feeling that student health projects are necessarily patronizing and dehumanizing to the community. In some cases these projects are felt to be an example of a racist mentality which relegates minorities to second-rate care (7,18), while in other circles, student projects are believed to patch up an ineffective health care system that should be allowed to crumble (50).

On the whole, however, students have recognized that their participation in extramural programs provides them with opportunities to gain experiences which they cannot obtain during their formal medical education, and at the same time provides some small measure of health care services to individuals and communities who might not otherwise have access to health care. Additionally, recent student efforts have been directed toward the use of extramural programs to bring pressure to bear upon the medical schools to incorporate similar experiences into the formal curriculum (51). The 1970-71 Committee on Medical Education of the Student American Medical Association developed a keen interest in the development and legitimation of extramural educational programs. They initiated efforts to create a catalog of available extramural opportunities, develop guidelines for the educational content of such programs, obtain recognition of student participation in such programs, and to obtain academic credit for student participants. They called for the types of experience gained in extramural educational projects to become an increasing part of the intra-curricular activity of the medical school in order to diversify the curriculum and give the students a broader range of exposure to medical problems and delivery systems. Additionally, they noted the need to expand the clinical base of medical education in order to increase its capacity for the education of health personnel (51).

RECOMMENDATIONS:

1. Medical schools should provide both technical and financial support for student organized community health projects and extramural educational programs. Curricular credit should be given wherever a program can provide evidence of offering the student a sound educational experience.

2. The lessons learned in student health projects and extramural programs should be drawn upon for inclusion in the formal program of the medical school. Such changes in the medical school curriculum can offer students a wider exposure to systems of health care delivery and broaden the base of medical education so as to exert a favorable effect upon delivery of health care.

SUMMARY:

Increasing student concern with the problems of health care delivery and medical education in the last several years has resulted in volumes of student-authored opinions on issues in these areas. While these opinions are diverse in scope and occasionally contradictory in content, a number of common themes have emerged. In general, students have considered medical education to be an important contributor to the mechanisms of health care delivery; thus, they call for change in medical education as a means of effecting ultimate change in the delivery of health care.

One of the most prominent themes of student discussion has been the concept of the health care team. Students see the current proliferation of allied health professions as a source of great potential in the resolution of many of the inequities presently extant in the delivery of health care. They realize, however, that further definition of the exact nature of the roles to be played by allied health professionals is sorely needed. Additionally, standardization of training programs and delineation of legal responsibility of allied health professionals are necessary in order to allow them to function as full members of the health care team of the future. Attitude changes among practitioners are necessary to eliminate the concept that the physician must always be the "captain of the ship" and to allow all the members of the health care team to function as equals. In order to accomplish the objective of delivery of health care by multi-professional teams, medical students have called for medical schools to train them to function on such teams. They feel that medical schools should be broadened in concept such that they may become health science universities in which all the members of the health care team may train together and become more familiar with each other's skills and attitudes so as to function together more effectively.

A second major thrust of student thought is in their call for increased production of primary physicians. Students have been distressed that the medical school is often geared to produce hospital-based specialists whereas the needs of society and the desires of students are more closely oriented towards general or family practice. They have put forth the concept of the "sophisticated generalist", a physician who practices family medicine, providing preventive care and treating the physical, emotional, and social problems of the patient and the family, while remaining well-informed on progress in all areas of medicine. Such physicians should be trained so as to allow them to participate on health care teams in settings where such participation is feasible, yet they must also have the capacity to function as independent practitioners in rural areas.

Democratization of medical education and health care delivery has been another important concern of students. Dissatisfied with their lack of impact on the nature of their educational experiences, they have demanded representation on all policy-making bodies within the medical school.

In addition, they have called for the representation of consumers on the controlling boards of all institutions concerned with the delivery of health care in order to assure that institutions remain responsive to the needs of those whom they serve.

Measures to improve the environment of medical education have also been a topic of much student discussion. They have described their educational environment in terms such as "dehumanizing", "stifling", "racist", "repressive", "competitive", and "authoritarian". In order to make medical school a more pleasant experience for future physicians, students have called for improving the quality of teaching, changing evaluation procedures so as to decrease the emphasis on student competition, and increasing freedom and flexibility for tailoring their educational program to their individual backgrounds and aspirations. Perhaps most important, students have asked that greater consideration be given to the personal needs of a heterogeneous student body and that more emphasis be placed on interpersonal relationships within medical schools. Students perceive insensitivity and lack of empathy as major problems in the relationship of physicians with their patients. As a step towards elimination of such problems, they have called for greatly expanded instruction in the social and behavioral sciences in medical school, with particular emphasis on the application of techniques of these sciences to problems of medicine. They point out that such instruction would provide the additional benefits of allowing them to approach on a more scientific basis problems on the interfaces between medicine and economics, sociology, psychology, and other aspects of human ecology.

Students see the admissions process as an important tool in effecting many of the changes which they desire in both medical education and health care delivery. They have called for decreased emphasis on achievement per se and an increase in consideration of the personal characteristics of applicants for admission to medical school. They base this upon the belief that, once a certain minimal level of educational competence and background has been achieved, the applicant's motivation, social consciousness, and other affective characteristics are of primary importance in his ability to become a good physician. Students believe that the application of such admissions criteria would result not only in a more pleasant educational environment and favorable changes in the social concern of physicians, but also in increased diversity of medical school student bodies. They believe that medicine must be transformed from a profession of the white, middle class, to a profession which includes representatives from all socioeconomic levels, varied racial groups, and divergent cultural backgrounds. Only in this fashion can equitable distribution of physician manpower and increased accessibility of health care be achieved.

Student concern with problems of medical education and health care delivery has culminated in their participation in numerous extramural programs. Through participation in these programs, they gain educational experiences unavailable to them through their traditional medical school curriculum, while gaining the satisfaction of being of service in providing increased health care to communities. The great blossoming of student interest in

extramural programs in recent years is primarily a reflection of deficiencies in medical education and student desires to have an effect upon the delivery of health care services. Upwards of 80% of all medical students are now estimated to participate in an extramural educational program at some time during their medical school career. While the primary emphasis of various programs ranges from strong orientation toward the provision of health care services to a community to almost exclusively education oriented experiences, the vast majority of programs endeavor to be of service to the community in which they are located, while providing the student with educational opportunities of which he would be otherwise deprived. Students have called for medical schools to recognize the value of the lessons learned through participation in such programs and to include such opportunities in their own educational programs.

If students are to succeed in their efforts to reform health care delivery systems, they will probably do so through reforming medical education. In order to bring about needed change, they need the support of concerned faculty and administrators within their own institutions. In addition, the financial support of state and federal government is a necessity. If all participants in the medical education-health care delivery community can come to work together as equals, one can only foresee a positive effect on the health of the nation. Students call upon medical schools and upon government to aid them in developing creative and successful approaches to the delivery of health care. No professional group has a finer potential for contributing broadly to the formulation of social policy than does medicine. The medical school has everything it needs-except perhaps, the willingness-to enter a new arena and become a community of social innovators.

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